

# Chapter 1

## RELATE THINKING SKILLS TO THE ARTS

*2nd Grader, Jessee Samper is working on his  
printed tessellation inspired by M.D. Escher.  
Brunswick Acres School, Kendall Park*



## RELATE THINKING SKILLS TO YOUR ACTIVITIES:

### A Few Theories to Work with...

## BRAIN HEMISPHERES

The brain has right and left hemispheres with distinct functions:

- **Left:** Rational, logical, sequential, linear, and concrete
- **Right:** Intuitive, imagery, holistic, spatial, and abstract

Tasks should be designed to take advantage of the part of the brain that best serves the successful completion of the task. For example, the students are given the task of drawing a portrait. A portrait is an image. A *mathematical, left brain* approach provides the students with an oval dissected with lines to reflect placement of the eyes, nose, and mouth. This geometric/mathematical approach fails as soon as the subject slightly turns or tilts the head. The oval prohibits accuracy of facial lines; all faces do not fit the pattern provided.

Visual perception of the image, a *right brain approach*, requires the student to focus and concentrate on details of shape as well as linear and spatial proportions. (Note: See *spatial intelligence* defined in the "Multiple Intelligences" section that follows.) Students analyze the identifying differences in the shape of each other's mouth, eyes, and other facial features. They draw several of each feature for comparison. Next, they draw one classmate beginning with one feature, then extend outward to incorporate the other features. They follow through with the hairline and facial outline attending to proportions and placement. This method allows students to alter the tilt and turn of the head and still obtain a good likeness.

There is generally a "best" approach to completion of a task. Knowledge and incorporation of thinking skills, thinking styles, and levels of thinking enable teachers and students to achieve at higher levels of performance.

Resource: Sperry, R.W., 1974. "Lateral Specialization in the Surgically Separated Hemispheres." In F. Schmitt and F. G. Worden, eds., *The Neurosciences: Third Study Program*. Cambridge, Mass.: MIT Press.

## MULTIPLE INTELLIGENCES

In “Frames of Mind: The Theory of Multiple Intelligences,” 1983, Howard Gardner wrote that a study of children’s growth and development suggests a number of distinct intelligences (related to patterns of thinking or thinking styles).

- **Linguistic:** Sensitivity to the order and meanings of words; sounds, rhythms, inflections, and meters of words; and the function of words: to excite, convince, stimulate, convey information, or simply to please.
- **Logical-mathematical:** The ability to appreciate the actions performed upon objects (confronting, ordering/reordering) and assessment of quality relations among those actions; statements/propositions about actual or potential actions and the relationships among those statements.
- **Spatial:** The capacity to perceive the visual world accurately; to perform transformations and modifications upon one’s initial perceptions; and to be able to recreate aspects of one’s visual experience, even in the absence of relevant physical stimuli. Sensitivity to patterns, forms, and the whole.
- **Bodily-kinesthetic:** Use of the body as an object to express self and feelings; aspirations/use of body parts (including hands) to arrange, transform, and manipulate objects in the world.
- **Musical:** The ability to discern meaning and importance in sets of pitches rhythmically arranged and also to produce such metrically arranged pitch sequences as a means of communicating to other individuals.
- **Interpersonal:** The external aspect of a person: the ability to notice and make distinctions among other individuals—in particular, their moods, temperaments, motivations, and intentions.
- **Intrapersonal:** The internal aspects of a person: the capacity to effect discriminations among feelings, range of affects, or emotions; and to label them, enmesh them with symbolic codes, and draw upon them to understand and guide one’s own behavior.



**Table 1.1***Blend Multiple Intelligences, the Arts and Interdisciplinary Connections:*

<b>INTELLIGENCES</b>	<b>ARTS</b>	<b>LANGUAGE ARTS</b>	<b>MATHEMATICS</b>	<b>SCIENCE</b>	<b>SOCIAL STUDIES</b>
<b>LINGUISTIC</b>	Describe how art elements are composed for aesthetic effect in an artwork.	Read and report on a biography of an artist and what influenced his/her work.	Write step-by-step instructions for matting a drawing.	Describe and give examples of how new building materials change the design of commercial architecture.	Describe the impact of social/political ideas on artists of the Renaissance.
<b>LOGICAL/ MATHEMATICAL</b>	Diagram choreography on paper.	Prepare a marketing plan for sale of tickets to a targeted audience.	Create a modular design for construction of a building complex.	Diagram the workings of a musical instrument.	Analyze your artistic product based on a teacher-provided rubric.
<b>SPATIAL</b>	Draw an architectural structure on-site with visual perspective.	Present orally, with demonstration, three ways to represent 3-D space, two dimensionally.	Measure and diagram your backyard or other area and design landscaping for its use.	Explain how “what you know” interferes with the visual interpretation of perspective drawing.	Create a timeline (1900 to present) citing prominent composers and the social influences on their work.
<b>BODILY/ KINESTHETIC</b>	Study, rehearse, and practice movement, vocal delivery, and emotional tension in acting/vocal music.	List 10 qualities of a natural object. Translate those qualities to a human personality, and create a character for a play.	In your journal, list your food intake for one week, and calculate the rate at which you burn calories through dance activities.	Identify alternative ways to condition/strengthen the body for dance.	Learn the basis for choreography of Hawaiian dance, then practice and perform a dance.
<b>MUSICAL</b>	Create and produce music for a variety of purposes.	Design sound effects and musical background for a play.	Study the physics involved in the design of a musical instrument.	Diagram the parts of the body affecting vocal presentation. Describe their impact on sounds.	Practice, rehearse, and perform in a choral group, band, or other musical or theater group.
<b>INTERPERSONAL</b>	Collaborate with a team to design a playground for an elementary school.	Facilitate a debate on the censorship of art works.	Create and implement a plan for determining the number of students using your playground during and after school.	Share your constructive ideas for improving your own and others’ art performances.	Work with a partner to design and perform a choreography or musical piece for a duet.
<b>INTRAPERSONAL</b>	Prepare sketches of personal experiences for use in creating original art.	Maintain a journal of your artistic progress. Develop it into a resume.	Experiment with timing in dance/music/theater to change tempo, and emphasis.	List the ways in which you think. Describe how you arrive at solutions.	Mentally visualize yourself working through an idea or performance.

**Table 1.2**

*Teachers' Grid to Develop Related Thinking Skills, Arts, and Interdisciplinary Connections:*

<b>INTELLIGENCES</b>	<b>ARTS</b>	<b>LANGUAGE ARTS</b>	<b>MATHEMATICS</b>	<b>SCIENCE</b>	<b>SOCIAL STUDIES</b>
LINGUISTIC					
LOGICAL/ MATHEMATICAL					
SPATIAL					
BODILY/ KINESTHETIC					
MUSICAL					
INTERPERSONAL					
INTRAPERSONAL					

## Taxonomy for a Cognitive “Full Bloom”

The words we use to instruct in the arts classroom should be carefully chosen. Lesson plans and instruction should be scrutinized for the use of appropriate, instructive verbs and tasks that elevate a child's cognitive functioning. Bloom's taxonomy of thinking skills identifies some of these instructional verbs and tasks/products and places them in a five-tiered table (with recall as the lowest level and evaluation as the highest level). Since the Standards require that all students be challenged to reach their maximum potential, the higher or lower functioning students can be assigned higher or lower level task challenges using Bloom's taxonomy. The verbs and products listed by Bloom can easily be adapted to art room and studio verbal instruction and arts products and performances. The levels listed reflect the thought processes for design. “A Taxonomy of Educational Objectives” conference presentation by Benjamin S. Bloom, 1949)

**Table 1.3** *Instructional Verbs and Tasks/Products Associated with the Levels of Bloom's Taxonomy*

RECALL*		APPLICATION		ANALYSIS		SYNTHESIS		EVALUATION	
Verbs	Products	Verbs	Products	Verbs	Products	Verbs	Products	Verbs	Products
list	label	show	photograph	summarize	questionnaire	compose	film	decide	conclusion
identify	name	apply	illustration	abstract	survey	imagine	formula	rate	judgment
locate	list	translate	diagram	classify	report	infer	invention	evaluate	panel
memorize	definition	illustrate	collection	dissect	graph/chart	hypothesize	poem	dispute	opinion
review	fact	record	map	compare	outline	invent	prediction	discuss	verdict
match	test	teach	puzzle	deduce	diagram	create	project	verify	scale
reproduce	reproduction	construct	model	order	conclusion	estimate	new game	judge	value
name	recitation	demonstrate	diary	investigate	list	produce	story	grade	recommendation
read			report	differentiate	plan	forecast	machine	choose	
recall			lesson	categorize	summary	design	media	assess	
				separate	catalog	predict		select	

\* knowledge/comprehension

*The arts require creativity. The creative thinker tends to exhibit certain habits of mind and personality.*

*The following page assists in the identification and nurturing of creative thinkers.*

## The Creative Thinker

*Without creative people and creative ideas we would still be living in caves, digging up roots for breakfast; and with luck, living to the ripe old age of 25 or 30. The history of civilization is the history of creative innovation in every area.*

DAVIS, 1987



LEONARDO DA VINCI

*Designed the parachute after watching a jellyfish float down to its prey!*



THOMAS EDISON

*Averaged one new patent every week of his adult life!*

E. Paul Torrance (1962) in “Guiding Creative Talent” described *student behaviors and cognitive skills identified with the creative thinker*. Entertain, require, demand, solicit, include, instruct, and expect to enhance the factors and behaviors below to generate creative thinkers.

- **Fluency and Flexibility:** Thinks about many things; has lots of ideas; is a divergent thinker; creates many characters; sees various viewpoints; and sees things in a humorous perspective.
- **Originality:** Is unique and intuitive; comes up with original ideas; finds clever solutions to problems; and suggests unique methods and novel innovations.
- **Elaboration:** Embellishes jokes and stories; adds detail; expands ideas; builds on; embroiders.
- **Risk Taking:** Is courageous and daring; experiments and explores possibilities; risks failure; and tries new approaches and tasks.
- **Complexity:** Organizes unrelated data; recognizes relationships; restructures; and encapsulizes visual and verbal presentations.
- **Curiosity:** Wonders; follows hunches; ponders outcomes; pursues inquiry; questions; and puzzles over people's reactions.
- **Imagination:** Fantasizes; daydreams; thinks up characters and story lines; visualizes change; and imagines images and events.

Test your own creativity by designing activities requiring these behaviors and characteristics.

## Systems Thinking

As part of the workplace readiness standards and indicators, it is anticipated that students be aware of and be able to analyze, understand, improve upon, or design systems. A system is an arrangement of parts, rules, and principles designed to be unified to work as a whole—e.g., the solar system; a political system; a system of government; office systems; a method, plan, or process; a mechanized or electronic system. A system provides the quality of being organized, orderly, and efficient.

**Table 1.4**  
*Activities for Systems Thinking*

Do an on-site drawing of a school or other public area. Describe the traffic flow and use of space. Does it work as intended? Why or why not?	Create and establish a system for storing and securing tools, media, instruments, etc., in the studio.	Describe the scientific basis for the functioning of a musical instrument in developmentally appropriate language.	Participate in an “Internet treasure hunt” to find a prescribed list of “treasures.” What “paths” did you take?	Make a list of the ways that you think. Write down when you think. Students share their lists. Each list is the student’s “thought processing system” (TPS). Students write in their journal how they will change their TPS.
A dance or theater troupe is a group of parts that work as a whole. Identify the parts and how they function for the good of the whole. Create an organizational chart using a computer.	Identify your community support system for the arts. In what ways do they provide that support?	You’re environmentally and aesthetically conscious and want a safe bike path for your town as part of the transportation system. Design it. How does the legal system apply?	What language systems are used by the arts? (Hint: symbols, music notation, <i>LabanWriter</i> , etc.)	Describe the functional differences between <i>brain</i> and <i>mind</i> . How does each function in the doing of art?
Explain the statement, “The whole is greater than the sum of its parts.”	Research modular designs and how they are used. Identify and prepare visual representations of modular design in nature.	Using a module as a unit of construction, create a model for a functional structure.	Do a series of drawings that describes the life cycle of a plant or an animal.	Write a “design brief:” Explain how a proposed design will improve an existing situation and the process that effects the change.